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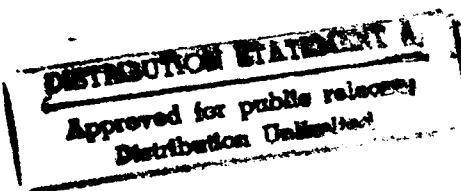
Executive Research Project

S62

Fighter Aircraft Foreign Military Sales: Industry Survival and National Power

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FIGHTER AIRCRAFT FOREIGN MILITARY SALES: INDUSTRY SURVIVAL AND NATIONAL POWER

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The Foreign Military Sales (FMS) of over 2,200 F-15, F-16, and F-18 fighter aircraft support the security assistance objectives of promoting democratic values, advancing peace, encouraging trade, countering transnational dangers, and fostering global security. These sales also strengthened the aerospace industry through revenues of nearly \$40 billion and they provided economies of scale to DoD. With the deteriorating "stability" of the former bi-polar world and the declining size of U.S. defense budgets, these sales help maintain regional security and burden sharing with 25 allied nations.

The future of fighter aircraft FMS is uncertain. The aerospace industry currently commands an enviable position in global trade, providing a \$30 billion trade surplus. However, it is struggling with over capacity, diversification, profitability, and declining sales. The loss of both prime and sub-contractors could have long-term adverse affects on the industry and FMS. Additionally, inconsistent and obstructive government policies add to the industry's frustration with arms exports. Political and economic support are critical to FMS today and will become even more important for the future sales of highly technical fighter aircraft.

To summarize, fighter aircraft FMS have a proven history of effective security assistance implementation. At the same time, they contribute to the financial, political, and military elements of national power through additional business to the ailing aerospace industry, political leverage to foreign policy decision making, and access and interoperability to the military. Desert Storm demonstrated how fighter aircraft FMS facilitated access, military interoperability, and the success of coalition forces. For these reasons, policy makers should increase support to fighter aircraft Foreign Military Sales.

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INTRODUCTION

On January 24, 1991, Captain Ayedh Salah al-Shamrani, an F-15 pilot in the Royal Saudi Air Force (RSAF), shot down two Iraqi aircraft. Flying a U.S.- built fighter, armed with U.S.- built missiles, and controlled by a U.S.- built, RSAF surveillance aircraft, this dramatic event validated the U.S. aerospace industry's technological lethality and the effectiveness of American Foreign Military Sales (FMS) policy. This policy, an economic, political, and military element of national power, serves to:

- **strengthen the U.S. industrial base through expanded business**
- **reduce unit costs to DoD through economies of scale**
- **provide access and interoperability with allies' logistics/operations assets**
- **reduce American casualties and conserve valuable resources**

The purpose of this paper is twofold. First, it will show that fighter aircraft FMS make a major contribution to the aerospace industry and may be pivotal to its survival. Nearly 2,250 McDonnell Douglas F-15s and F-18s, and General Dynamics F-16s have been sold at a value of \$40 billion.¹ Although FMS peaked in 1987, contracts for nearly 400 fighters have been signed during the last two years. In contrast, DoD sales are declining, and sales of commercial aircraft fell last year after ten years of tremendous growth. Future FMS may provide the extra business required to help suppliers and prime contractors survive. Second, this paper will show the relationship of fighter aircraft FMS to the economic, political, and especially, the military element of national power.

Economically, a strong civil and military aerospace industry means 1.2 million jobs, and \$138.9 billion in annual sales.² **Politically**, the Commander in Chief sets the FMS tempo as he uses its influence for political leverage in foreign policy. **Militarily**, through FMS, U.S. forces gain access to foreign bases and enjoy close interoperability with allied forces.

Before presenting an in-depth analysis of fighter aircraft FMS, relative to industry survival and national power, it's important to understand the security assistance process, its historical record of fighter sales, and the potential for more sales in the future.

SECURITY ASSISTANCE

Security assistance includes the U.S. Government programs that aid other nations and their security, in support of U.S. political and foreign policy objectives. When a foreign government requests the purchase of fighter aircraft, the intelligence, logistics, and operations service representatives must coordinate on the acceptability of the sale.

Classified elements of FMS require the approval of the Defense Technology Security Administration. Congress, the State Department, and the Department of Defense must also approve the sale of significant military equipment such as fighter aircraft. The Defense Security Assistance Agency (DSAA) is DoD's focal point for FMS programs in support of long term U.S. national security objectives. The FY 1992 Congressional Presentation Document listed these five themes for security assistance in the 1990s: ³

- 1. Promote democratic values, free elections, and human rights**
- 2. Advance the cause of peace through arms control and non-proliferation**
- 3. Economic progress through deregulation, trade, and investment**
- 4. Counter transnational dangers, environmental degradation, and narcotics**
- 5. Foster global responsibility sharing, industrial democracies, and markets**

FMS HISTORY

WW II marked the beginning of modern FMS as an influential element of national power. Before the war, being self-sufficient in resources and production was considered critical to the U.S. policy of isolationism. National power was manifest in raw material stockpiling which served as insurance that no production breaks would occur during a crisis. Two noted foreign policy "Realists," James Schlesinger and Hans Morgenthau, viewed this military industrial complex as totally self-sufficient or autarkic. WW II spawned increased arms production and the post-war period saw foreign military sales competition grow as nations became aligned with the superpowers.⁴ Many second and third world countries depended on the superpowers' willingness to provide them with

modern weapons, communications, and transportation resources in order to secure their borders and deter aggression.⁵

In the 1950s and 60s, military considerations and the sale of out-dated equipment dominated FMS decisions. Foreign sales helped keep production lines warm and amounted to no more than \$2 billion/year. Between 1966 and 1975, the number of FMS recipients increased by 25% to a total of 74 nations. Several fighters, the F-4, F-5, F-100, and F-104 were widely sold in the 1960s and 70s. Most notably, the F-4 provided essential combat power to ten allied air forces around the globe while saving the U.S. Government \$3.5 billion in production costs through economies of scale.⁶

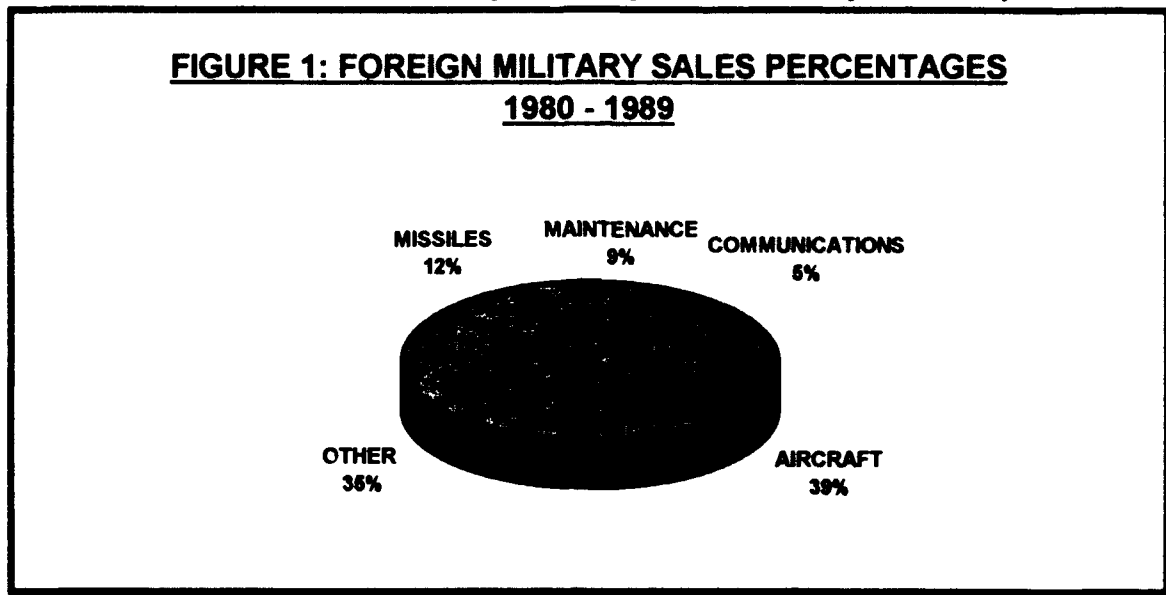
In the 1970s, FMS became more complicated as economic and political considerations became globally interdependent, particularly in the Persian Gulf. Economically, Middle East petrodollars returned through FMS provided some relief from a negative trade balance. Politically, the transfer of U.S. military equipment helped cement relations with Middle East allies and guaranteed access to the region's oil reserves. Wealth and security risks resulted in the Middle East's increasing demand for modern equipment, and FMS jumped to \$12-14 billion a year.⁷

In 1979 the Shah of Iran was ousted. Because his fighter aircraft were dependent on U.S. suppliers and technicians, these aircraft quickly lost their combat effectiveness. Foreign dependency on U.S. support continues to be a positive aspect of FMS. Indeed, aftermarket support is one of the hallmarks of U.S. aerospace preeminence.

The global increase in arms demand created export competition with both friendly European producers and Communist competitors. As technology spread throughout the third world, countries like China sold assorted weapons to U.S. allies and adversaries like Iraq, Iran, Syria, Pakistan, and Israel. Unfortunately, global arms proliferation reduced the economic, political, and military leverage of the U.S. security assistance programs.

During the late 1970s and early 1980s, the F-15, F-16, and F-18 fighter aircraft entered the FMS market. Foreign governments from around the world placed orders for

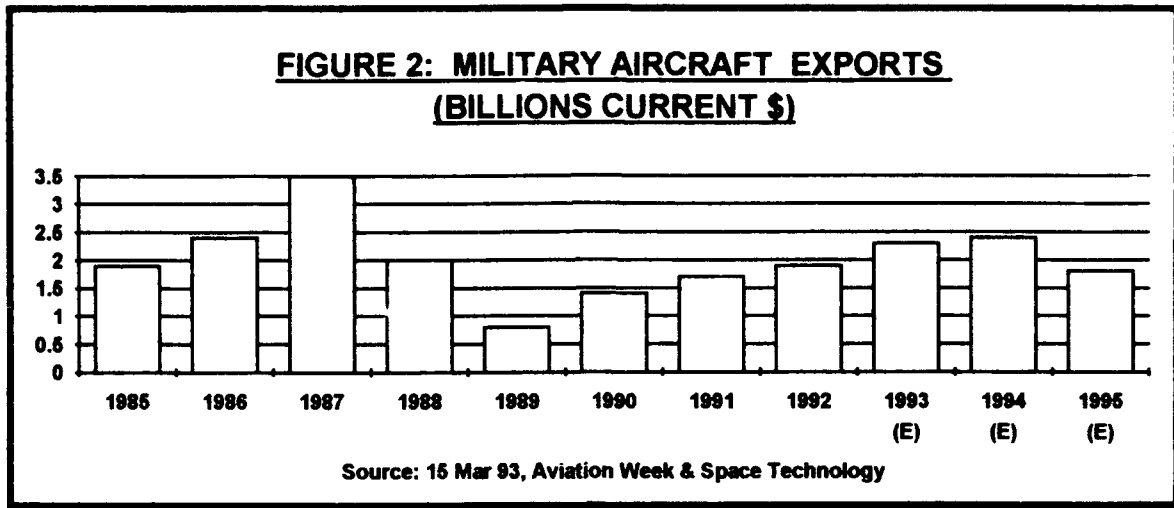
these modern fighters. As Figure 1 shows, aircraft FMS were the largest segment of total U.S. sales in the 1980s, and this had a positive impact on the aerospace industry.⁸



Politically, sales to one country often required sales to another in order to maintain a stable, regional balance. Middle East fighter aircraft FMS often required complete air base construction as well. Economically, FMS purchasers negotiated for contract incentives, especially production offsets. Offsets required significant foreign production of the FMS program like NATO's cooperative production of the F-16. Beyond cooperative production, Turkey and Korea have recently negotiated offsets to perform complete F-16 assembly in their countries.

Foreign production offsets granted through the U.S. aerospace industry helped capture a large FMS market, but it has increased U.S. dependence on foreign manufacturers. In many cases, foreign parts perform better and cost less. This makes the idea of an autarkic U.S. aerospace industry archaic. While certain aerospace technologies and manufacturing processes are kept secret, FMS contracts and offsets have resulted in global interdependence of aircraft and weapons' parts and supplies. If replacing overseas suppliers were even feasible, it could take up to 18 months.⁹

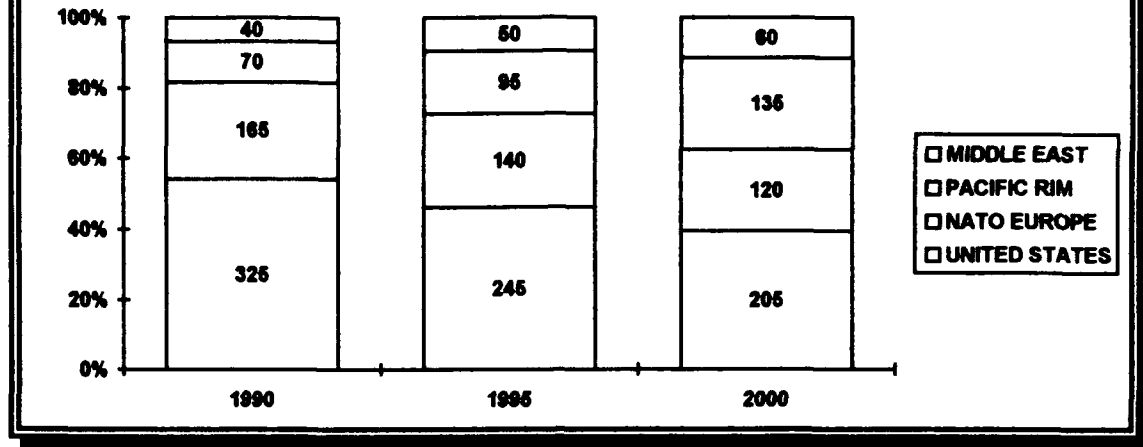
Figure 2 presents the value of military aircraft exports and their 1987 peak. Since Desert Storm, sales have improved and may exceed the estimates shown in 1993-95.



Having shown that aircraft FMS is a major part of the security assistance program, the shift away from a bi-polar world might suggest that FMS is an outdated form of national power. To the contrary, although many regions are cutting defense budgets, emerging economic clusters, in areas vital to U.S. interests, are forecast to increase defense budgets.

Potential FMS Markets are shifting away from the NATO, Cold War dominance that saw FMS there grow from \$1.8 billion in 1978 to \$4.2 billion in 1988.¹⁰ Today's European arms markets are declining as defense budgets are adjusted to the current world environment. Conversely, other FMS markets are growing. Aviation Week & Space Technology reported that the Pacific Rim would have one of the fastest growing defense budgets and would probably increase FMS purchases if U.S. forces in the region were reduced.¹¹ Additionally, the Middle East's oil reserves continue to show potential for long term wealth and defense growth. Both areas are vital to our national interest and in the Fall of 1992, President Bush announced sales of 72 F-15s to Saudi Arabia, and 150 F-16s to Taiwan. On the next page, Figure 3 portrays this shift in potential defense spending as projected by the U.S. Congress in its booklet, Global Arms Trade.¹²

**FIGURE 3: PROJECTED
DEFENSE SPENDING
1988 BILLIONS**



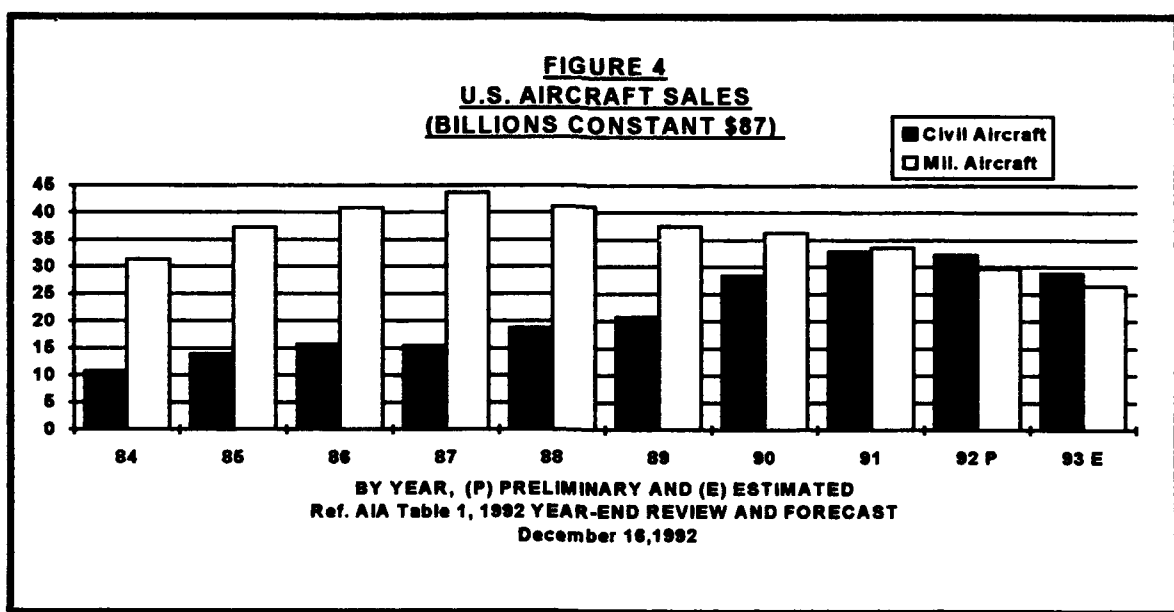
THE AEROSPACE INDUSTRY: FINANCIAL ELEMENT OF NAT'L POWER

In Morgenthau's Politics Among Nations, the following quote relates a nation's industrial capacity to its national power and directly applies to the aerospace industry.

The technology of modern warfare...has made the over-all development of heavy industries an indispensable element of national power. Since victory in modern war depends upon the number and quality of...(weapons)...the competition among nations for power transforms itself largely into competition for the production of bigger, better, and more implements of war. The quality and productive capacity of industrial plant, the know-how of the working man, the skill of the engineer, the inventive genius of the scientist, the managerial organization--all these are factors upon which the industrial capacity of a nation and, hence, its power depend. ¹³

The U.S. aerospace industry, including both commercial and military aircraft, exemplifies American ingenuity, technical superiority, and international competitiveness. It is undoubtedly one of America's economic "crown jewels," providing a major contribution to the financial element of national power. During a decade of slow economic productivity, declining economic competitiveness, and massive trade deficits, total aerospace sales were very strong. In 1991, the U.S. trade deficit was \$66 billion.

But aerospace exports posted an impressive \$30.7 billion trade surplus and exceeded 10 percent of all U.S. manufactured exports.¹⁴ Although exports of commercial aircraft remain questionable, military aviation exports show strong sales potential and remain a very profitable segment of the industry's business. For example, an average of three aerospace companies conducting only 15 percent of their business overseas generated 33 percent of their profit through these sales.¹⁵ *"Defense exports to U.S. allies are becoming increasingly important to sustain those companies operating military production lines,"* said Aerospace Industry Association (AIA) economist Mr. David Vadas.¹⁶ AIA President Mr. Don Fuqua expressed hope that the new administration would not cut defense further or restrict overseas sales of U.S. aircraft.¹⁷ Preliminary analysis of President Clinton's defense budget would indicate that AIA will be disappointed by deeper defense cuts. Therefore, increased overseas sales to the Pacific Rim or the Middle East will be critical to the industry's survival. Figure 4 illustrates total civil and military aircraft sales. Unlike the FMS chart, it shows the steady decline of DoD procurement since 1987. Despite strong civil aircraft growth in the 1980s, its reversal in 1992 shows that both segments of the industry have now begun to decline.



AEROSPACE INDUSTRY SURVIVAL

Several steps are recommended for surviving this period of declining defense budgets.

1. Assess area of strengths and weaknesses five years into the future.
2. Align the strongest programs with growing markets.
3. Cut out any business that isn't No. 1 or No. 2 in its market.
4. Defend product through R & D to stay at the leading edge.¹⁸

While these four rules are generally accepted among the major defense contractors, "increasing FMS" could be read into these recommendations. However, implementing these steps has resulted in two entirely different survival strategies. Martin Marietta may remain viable to the FMS business, but General Dynamics probably will not. Regardless, industry teaming or risk sharing has also become a paramount strategy for survival in the aerospace business and a means to remain viable for continued FMS participation.

The Martin Marietta survival approach is to diversify into more non-military markets while continuing to capture more market share. Business expansion during shrinking defense procurements and a slow economic recovery would appear risky. However, in spite of lower sales, Martin Marietta's profit for 1992 was up 10 percent as Pentagon orders fell 9 percent and non-defense orders rose by 20 percent.¹⁹ Martin Marietta's strategy, called "**Invest and Grow**," also resulted in the biggest defense industry acquisition ever, the \$3 billion purchase of GE's space and electronics business. Norman R. Augustine, Martin Marietta's CEO, is determined to control enough of the weapons business to ensure his company survives the industry shakeout. Commenting on his company's business strategy relative to General Dynamics, Mr. Augustine said:

To the extent we are able to serve both defense and nondefense markets from the same company, our strategy is probably better for preserving the defense industrial base and preserving jobs.²⁰

The General Dynamics business strategy is characterized by a process called "rationalization." Describing rationalization to an industry meeting in October 1992,

General Dynamics CEO Mr. Bill Anders discussed both the downsizing of industry and its consolidation. He defined rationalization as public and private mergers to maintain a strong competitive position or "critical mass" in the particular defense industry.²¹ In December 1992, G.D. announced the sale of its Fort Worth Aircraft Division to Lockheed for \$1.5 billion. G.D. had already sold its missile division, computer operations, and its small aircraft subsidiary for the total of \$2.8 billion. G.D. is left with its Electric Boat submarine yard and its Army tank operation, both available for sale. Mr. Anders defines success in terms of overall return to shareholders. The "**Monetization**" strategy of G.D. was advisable in Anders opinion because he couldn't find anyone willing to sell their defense industries to G.D.. To Anders, monetization is "*...part of a healthy process by which the defense industry is shrinking and consolidating.*"²² While some aerospace analyst oppose G.D.'s sell-off and departure from the military aircraft business, most agree that survival requires the large defense contractors to form teams to reduce financial exposure and risk.

Teaming arrangements are a relatively new aerospace survival technique in today's high cost and high risk development environment. Teaming helps spread out the risk of expensive fighter programs and replaces the single prime contractor of fighter aircraft development with several primes working together. An example is the USAF F-22, whose original team consisted of Lockheed/Boeing/General Dynamics. The estimated ten year development cost of \$15.5 billion for the F-22 is far too expensive and risky for a single company to undertake.²³ Even sophisticated engine development carries a great deal of risk as this quote from Made in America states.

The cost of developing a new jet engine is more than \$1 billion, and some 2,000 sales over 10 years may be required to break even. Replacement engines and spare parts are an essential element of the business and its most profitable aspect; during the lifetime of an airplane, the cumulative cost of its engines and their replacement parts is equal to the purchase price of the airplane.²⁴

THE POLITICAL ELEMENT OF NATIONAL POWER

Since the Vietnam War, the president, acting as the Commander in Chief, has exerted considerable influence on foreign policy and the tempo of arms sales. Throughout the early 1970s, U.S. export policy was to equip friendly nations' indigenous forces with more capable weapons to derive a more effective combat force. In return for these weapons, the U.S. hoped to reduce the need for military intervention while maintaining good political relations. President Carter was generally opposed to arms proliferation. His 1977 Presidential Directive No. 13 made arms sales an exception to foreign policy. Carter's restrictive arms sales policy attempted to cut both the quantity and quality of FMS programs. Human rights compliance remains as a Carter legacy guiding approval of FMS programs today.

In a policy reversal, President Reagan rescinded Carter's FMS directive. Reagan dramatically increased sales as a method of improving U.S. security through arms sales to friends and allies. On March 19, 1981 the Reagan Administration stated, *"Arms transfers should be viewed as a positive and increasingly important component of our global security posture and a key instrument of our foreign policy"*.²⁵ During his two terms, President Reagan's defense policy of **"Peace Through Strength"** laid the foundation for victory in the Cold War.

Current U.S. export policy is still strongly motivated by political considerations. Congress and the Executive branch constantly wrestle with the paradigm of arms sales proliferation on the one hand, and the survival of the aerospace industry and security assistance on the other. In 1990, the U.S. share of third world arms sales increased from 23.6% to 44.8% to become the top exporter to the third world.²⁶ While this sounds like a dubious honor, it is more symptomatic of two phenomena. First, the Soviet Union had practically dropped out of the arms export business and charged exceptionally low prices for its weapons. Second, Desert Storm generated an unusually high demand for U.S. high-tech weapons systems and the replenishment of expended munitions. In 1992,

President Bush invited France, Russia, United Kingdom, and China to arms control talks concerning the Middle East. China left the group when the President announced the sale of F-15s to Saudi Arabia and F-16s to Taiwan. In a December 1992 speech at Texas A&M, President Bush reaffirmed his foreign policy.

Our choice as a people is simple. We can either shape our times or we can let them shape us, and shape us they will, at a price frightening to contemplate -- morally, economically and strategically.²⁷

No other nation has the strategic resources to respond as rapidly and effectively when international stability is menaced. But America's wealth is finite and allied burden sharing has become "politically correct" to achieve cooperative global security interests.

Burden Sharing FMS has become a main ingredient of the political process to diffuse regional conflicts. The United States needs strong military partners and political friends around the world to share in the financial burden of defense. FMS transfers enable friendly countries to stand by themselves, independently defending their national sovereignty. While U.S. forces retract from 1.6 million to President Clinton's target of 1.4 million, and forces in Europe and Asia are reduced, the limited remaining U.S. forces must be reserved to exercise military power for the most essential national interests. Therefore, security assistance contributes directly to the defense of the United States. It also helps allies and friends share the larger burden of defending freedom around the globe.²⁸ In order to remain responsive to FMS requests for modern fighter aircraft, many industrialists are seeking government assistance in streamlining export controls of sensitive aerospace technologies.

EXPORT RESTRICTIONS

The Defense Security Assistance Agency is the DoD agency responsible for FMS contracts, but the State Department has the licensing responsibility under the Arms Export Control Act and the International Traffic in Arms Regulations. Unfortunately, their processing capabilities were overwhelmed by the growing number of FMS requests in the

1980s. To correct the problem, State established the Center for Defense Trade in the Bureau of Politico-Military Affairs in January 1990. With an expanded staff, this organization was supposed to break the licensing log-jam.²⁹ However, Lockheed's CEO, Daniel Tellup, recently urged President Clinton to review the Defense Export Policy. Tellup and many other contractors complained about regulation inconsistencies between State, Defense, and Commerce. According to the National Academies of Science and Engineering, the 12 agencies (plus the military services) that define export policy are strongly diverse and often work toward separate interests. This leads to uncoordinated security, economic, and foreign policy guidance. The National Academies stated: "*A disproportionate amount of bureaucratic resources are thus expended in resolving disputes, rather than administering and enforcing the export control system.*"³⁰

Associations like AIA and the American League for Exports and Security Assistance are pressing the government to cooperate with the defense industry and reduce legislation and regulations that unduly restrict arms exports.³¹ The Office of Technology Assessment predicts that export restrictions will reduce the U.S. share of the non-communist aerospace market, which was 62 percent in 1988, to only 53 percent in the year 2000, and a dismal 50 percent by 2010.³² If this is true, security assistance programs will suffer.

GOVERNMENT RESEARCH AND DEVELOPMENT

FMS competitiveness would be improved if government sponsored R&D had been concentrated in industrial development and not basic research. In Gansler's Affording Defense, he states that "*...other nations spend a significant share of government sponsorship of R&D on 'industrial development' (for dual-use technologies).*"³³ A brief comparison of the European and U.S. aerospace industries will show the need for reform.

The European aviation industry is threatening U.S. manufacturers for the first time and attempting to dull the luster of America's aerospace crown jewel. Overseas, government subsidies enable aircraft industries to grow and gain market share under unprofitable circumstances. For example, the French Airbus Industrie pools the resources

(government financing) of French, British, German, and Spanish aerospace industries to synergistically develop, finance, and market a very competitive family of aircraft.

The U.S. aviation industry's technology and infrastructure has not received as much government support and its competitive edge has been in decline. Government sponsored basic research has done little to get new products into the market-place. Technology validation and industrial development need capital investment that many manufacturers can not afford. The new administration may be willing to help. On February 22, 1993, President Clinton visited Boeing's 747 factory in Everett, Washington and announced a new aerospace industrial policy. The President said: *"This plan contains \$8 billion in new investments in aeronautics and technology, research and development, and the development of new products over the next five years."*³⁴ This commitment to a government-industry partnership will provide critical assistance and a more level "playing field" in international competition. While this policy appears to be a step in the right direction, will it be enough help for the industry to survive?

The combined financial and political impact of the global economy, relative to the aerospace industry, will continue to be dynamic and evolutionary. Government policies that strengthen the U.S. aerospace industry will have positive effects on both civil and military competitiveness. The prime contractors, backed by hundreds of sub-contractors and thousands of third and fourth tier suppliers will benefit too. But foreign contractors and suppliers can't be totally shut out or their markets will close to U.S. exports. All the current issues of teaming, risk, global economics, technology, and politics are coherently summarized by Robert Reich in his Work of Nations.

There will no longer be national economies, at least as we have come to understand this concept. All that will remain rooted in national borders are the people who comprise a nation. Each nation's primary assets will be its citizens' skills and insights. Each nation's primary political task will be to cope with the centrifugal forces of the global economy....³⁵

THE MILITARY ELEMENT OF NATIONAL POWER

"*Check Twelve*," cautioned Secretary Donald B. Rice in January 1993 as he terminated his nearly four year term as the Secretary of the Air Force. In the Air Force, "*Check Twelve*" means look out for what's ahead. More of his remarks follow:

Landscape changes, both international and domestic, have transformed the environment within which we will develop security policy. The greatest danger before us is the erosion of international cooperation in the face of such common threats as proliferation of weapons of mass destruction, environmental degradation, regional conflict, and the destruction of governance in democracies not yet firmly established. The challenge before us is to preserve collective security in a splintering world.³⁶

Secretary Rice also defined "*forward presence*" in a way that safeguards the future through continued international engagement. Noting that troops were essential in many areas of the world, he also called for "*....relationships that guarantee global access and influence.*" Arms sales programs were one of the five areas he addressed to attain global access.³⁷ Through the sales of three modern U.S. fighter aircraft, the McDonnell Douglas F-15 and F-18, and the Lockheed F-16, the Department of Defense has FMS contracts with 25 countries around the world. A brief description of each program follows, with emphasis on the broad international access they provide.

ACCESS

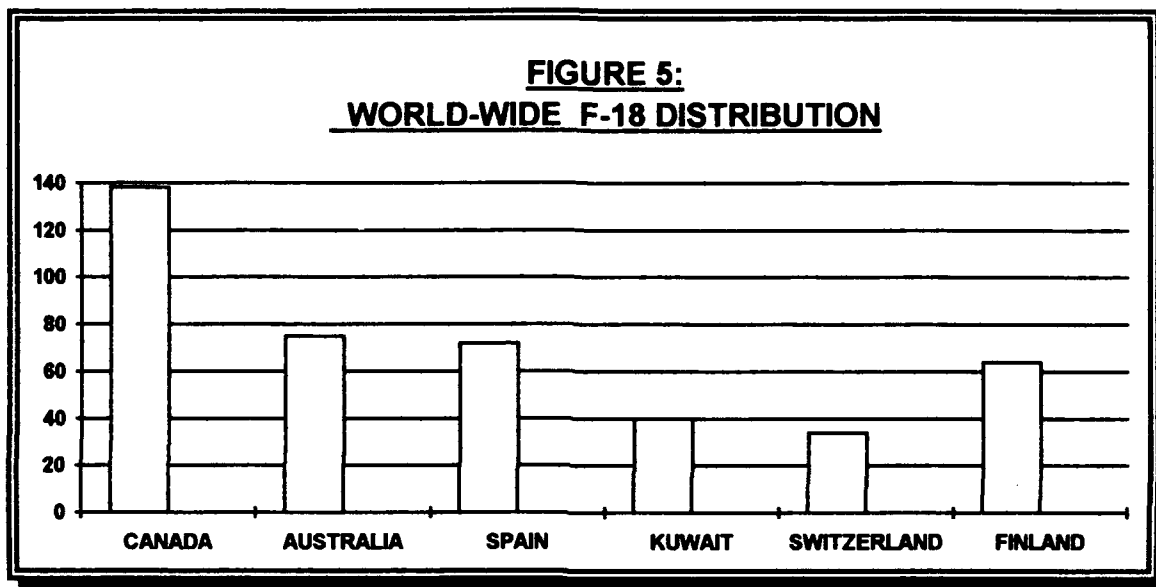
The term "Access" means more than the entry and presence of U.S. aircraft in a foreign country. It also represents the continued commercial, military, and political relationships that these FMS programs generate. An aircraft sale is only the beginning of a life-cycle contract demanding continuous U.S. aerospace and military cooperation for operations support, logistics, training, and combined operational exercises.

The McDonnell Douglas F-15 air superiority fighter has been sold to Israel, Saudi Arabia, and Japan. Its air defense qualities have deterred and defeated aircraft intrusion effectively for 20 years. The recent Saudi FMS contract for 72 additional F-15s will

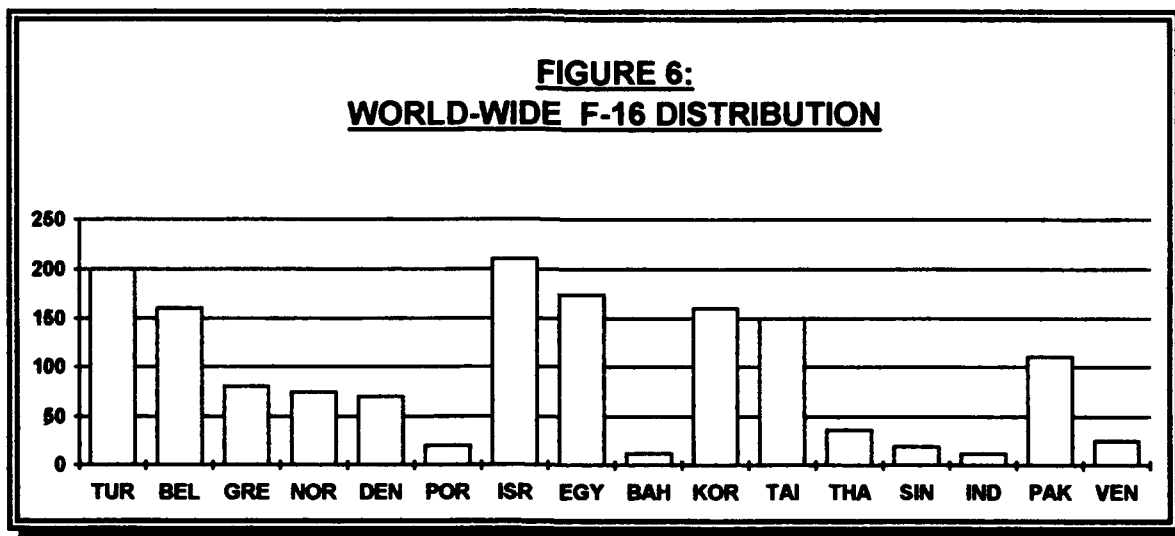
enable McDonnell Douglas to keep their F-15 production line open for several years as the USAF's F-15 production requirements are nearly complete.

The next two graphs show the world-wide access gained by the F-18 and F-16 FMS. The charts include all current orders and those that are nearing final agreement. However, due to constant changes, the data should be considered trend information only.

The McDonnell Douglas F-18 exports are shown in Figure 5 below.



The General Dynamics/Lockheed F-16 will upgrade 17 allied air forces with nearly 1,750 aircraft. Figure 6 shows F-16 FMS distribution.



INTEROPERABILITY

Like access, interoperability represents military power. The following two examples illustrate how FMS strengthen and multiply the element of military power.

First, relative to a weapon system sale, FMS interoperability begins when the foreign government initiates its request to purchase a fighter aircraft. The country's concept of operations, mission requirements, and employment plans are all examined in order to provide the best possible support at the lowest cost. Foreign Liaison Officers (FLOs) from the purchaser's country are normally assigned to the Air Material Command's System Program Office and International Logistics Agency. These officers communicate daily with U.S. civilian and military counterparts responsible for life-cycle FMS support. Conversely, U.S. military technicians and civilian contractors go to the purchaser's country to conduct site surveys and insure host country preparedness for technical and logistic life-cycle support of the FMS aircraft. It is not unusual for contractor support personnel to remain in-country indefinitely supporting and training weapon system specialists. An important U.S. benefit of this interoperability is the in-depth technical knowledge and logistical control of the weapon system. If political relations declined, withholding technical assistance and spare parts would quickly reduce the aircraft's effectiveness.

Second, interoperability means allied air forces operating synergistically. Pilots and support personnel of the same aircraft type must understand each others' capabilities and limitations. This is usually accomplished during combined training exercises where ground servicing procedures and inflight tactical operations are practiced together. Operating synergistically means producing a greater total combat capability by sharing common support assets both on the ground and in the air. In the Gulf War, U.S. and Saudi F-15s provided defense for all coalition ground and air forces while sharing the same surveillance aircraft command and control. If a regional conflict occurs close to one of the 25 fighter aircraft FMS locations, interoperability will be a great combat-multiplier through the efficient use and conservation of scarce support resources.

DoD FIGHTER PROCUREMENT, PRESENT AND FUTURE

There are two issues relating to DoD fighter procurement that concern FMS customers: continued U.S. procurement of a current FMS fighter, and the availability of a follow-on fighter for the FMS arena.

Present procurement of fighter aircraft by DoD is a primary concern of FMS customers. Knowing the U.S. will remain committed to the life-cycle support of an aircraft is critical to the purchase decision of a foreign government. The export failure of the "designed for FMS" Northrop F-20 "Tiger Shark" illustrates this point. When the USAF declined to buy the F-20, no FMS contracts materialized. Eliminating domestic procurement also leaves the foreign customer with the perception that the U.S. will abandon life-cycle support commitments. However, both the Northrop F-5 and McDonnell Douglas F-4 show that these concerns are unfounded. Out of production for several years, FMS logistics issues are routed to the F-5 and F-4 Technical Coordination Groups located at the respective USAF depots. The depot engineers and logisticians continue to honor commitments to FMS customers around the world even though the aircraft are considered "mature weapons systems," essentially out of the active USAF inventory. However, economies of scale are still achieved by consolidating world-wide FMS requirements and then soliciting contractors to perform the required repairs or replacement parts production. Nonetheless, the potential FMS customer, or one who is considering additional purchases, would be encouraged to see even low-rate DoD procurement of the fighter aircraft.

DoD fighter aircraft production is in jeopardy as defense budgets continues to shrink. Both the F-16 and F-18 are scheduled for DoD deliveries throughout most of this decade at rates of 24-36 aircraft/year. Force structure reductions are still on the table and DoD procurement of both fighters is tenuous at best. However, the large U.S. fighter purchases during the late 1970s and all through the 1980s leaves an aging fleet at the turn of the century. The 25 FMS purchasers of modern fighter aircraft share this problem. If

DoD cancels additional U.S. procurement of the F-15, F-16, and F-18, the chances for additional foreign sales will be severely limited.

Future DoD fighter procurement is also vitally important to our allies' security interest. They strive to stay at the leading edge of technology and combat capability. The F-22, designed to replace the USAF's 30 year old air superiority fleet in the next decade, will inevitably be requested by foreign countries for the same reason. Unable to develop their own indigenous air superiority fighter due to high costs or engineering technicalities, the F-22 will be in great demand. However, the release of critical technologies and manufacturing techniques is troublesome for the FMS customer. USAF fighter superiority has been achieved through leading edge technologies that many agencies regard as show-stoppers for export programs. Program managers and engineers should be able to design work-arounds for these obstacles. Without an early decision to export the F-22, design changes become expensive and offset negotiations become difficult.

- Affordability for an FMS country is another potential stumbling block. This issue is interesting because the survival of the F-22 may hinge on cost. Originally, the Air Force planned to procure 750 aircraft at an economic rate of 48/year. The new administration has plans for only 648 aircraft. Low-rate production of 24/year was announced by Lockheed in response to the latest budget constraints.³⁸ This will create significant force structure adjustments, schedule delays, unit cost increases, and may ultimately reduce the total USAF procurement. A recent Aviation Week & Space Technology article conducted a "Five Year Outlook" for the aerospace industry. It noted that aviation procurement is taking up a disproportionate share of the Air Force and Navy budgets. Additionally, the cost efficiencies projected during the Reagan era through economies of scale are not going to materialize in the future.³⁹ A four-star "summit" on the F-22 was conducted on March 19, 1993. Its purpose was to validate the requirement for the F-22 in view of the declining defense budget and competing alternatives. Among the topics discussed were the use of the F-22 platform to perform multi-role missions including interdiction and

ground attack. The multi-role argument for the F-22 may mean eliminating other new programs as a cost savings measure. FMS interest would be even more intense if the F-22 took on a multi-role responsibility and alternative fighter projects were canceled.

Regardless of the outcome of the air superiority vice multi-role argument, if F-22 FMS and DoD requirements were consolidated, efficient production rates and economies of scale for the F-22 would be more attainable. Most importantly, F-22 FMS would provide potential access and interoperability with U.S. allies for several more decades.

Air Force Secretariat action to coordinate and act proactively on FMS issues is underway. The Deputy Under Secretary of the Air Force for International Affairs (SAF/IA) is forming an Air Force General Officer Steering Group. Coordinating across the Air Force, it will discuss international issues regarding the Defense Planning Guidance for "*...building long-standing alliances and friendships with nations that constitute a prosperous, largely democratic, market-oriented zone of peace and prosperity.*" The SAF/IA strategy involves consensus building among senior military leaders relative to international programs. The objective is to create a greater total impact on USAF contributions to national security.

In August 1992, SAF/IA published a White Paper which outlined the international fighter environment. It strongly urged USAF leaders to support both the Saudi and Taiwan FMS programs. Addressing the competition among the international fighter programs and the viability of the aerospace industry, SAF/IA stated:

The US stands at a unique juncture in which it can take the initiative to reap tremendous political, economic, and technological benefits. Conversely, inaction could lead to atrophy in one of the most potent elements of US national power and international security.⁴⁰

As events unfolded, President Bush supported both FMS proposals. Hopefully SAF/IA's influence will continue to grow and provide the leadership to win more support for the aerospace industry and its element of military power.

CONCLUSION AND RECOMMENDATIONS

The aerospace industry in the United States is strong, but it can be stronger. Given the global economic slowdown and relative security from wars of mass destruction, continuing to pour money into defense without regard for balancing the budget and reducing the deficit is clearly inadvisable. Paul Kennedy makes it very clear in his epilogue to Rise and Fall of the Great Powers, that a country spending itself into debt in the name of defending itself risks internal destruction unless it can reduce its military expectations internationally.⁴¹ But several actions can be taken today to preserve the preeminence of the aerospace industry and its influence on national power without risking internal destruction and without sacrificing the defense of our national interests. All these objectives can be achieved through a positive approach toward foreign military sales.

Taken from Morgenthau's quote on industrial power, these include:

1. "... the quality and productive capacity of industry."
2. "...know-how of the working man...skill of the engineer."
3. "...inventive genius of the scientists."
4. "...managerial organization."

First, the quality of our aerospace exports must simply be the best in the world! The government must help the American aerospace industry, and most importantly the prime military aircraft contractors, to consolidate and compete internationally.

Second, the American workers and engineers building defense products must be provided state of the art manufacturing technology to insure the U.S. comparative advantage yields the best and least expensive aerospace products in the world.

Third, our scientists have been given a list of critical technologies to meet the threat of the next century. Government should sponsor R&D incentives for developing and integrating these technical advances. Leading-edge technologies must be safeguarded through software and hardware security measures to permit secure FMS of new weapons like the F-22.

Fourth, organizational leaders (political and military) must work cooperatively toward aerospace competitiveness and profitability. Addressing management, Secretary of Labor Robert Reich wrote:

The key assets of high-value enterprise are not tangible things, but the skills involved in linking solutions to particular needs, and the reputations that come from having done so successfully in the past.⁴²

Low-rate production of U.S. FMS fighter aircraft is the best short-term solution for maintaining and encouraging additional fighter aircraft FMS. If DoD production of either the F-18 or F-16 is terminated, potential and on-going FMS programs may be terminated due to production base losses and increased costs. When one FMS program stops, others will probably follow in a cost-increasing domino effect. This in turn would create a hardship for many suppliers who form a common civil/military supply source such as the 1,600 suppliers in 40 states building F-18 parts.⁴³

Future access and interoperability with our fighter FMS customers will eventually require sales of the F-22. I recommend the strongest possible support of the SAF/IA initiatives to remain proactive, gain international cooperation, and promote the global peace that fighter FMS have grown to represent. Early coordination and commitments with FMS customers could reduce the F-22's financial burden on DoD.

Successfully meeting these aerospace industry challenges will also meet the objectives of FMS policy: to build a strong aerospace industrial base that is not only surviving but expanding, to reduce aircraft unit costs and conserve defense spending through expanded FMS programs, to expand access and interoperability with our allies while increasing our own element of national power, and finally, to reduce American casualties by providing our allies with the means to deter regional conflicts at the earliest possible time.

Even today, as the world grows frustrated over its inability to cope with the war between Bosnia and Herzegovina, NATO air forces, including Dutch F-16s are enforcing

the no-fly zone over the battlefield. This could turn out to be the first aerial combat for a NATO air force since the organization was formed over forty four years ago. But equally important, if the U.S. exercises its military power in the region, several regional countries have common U.S. fighter aircraft to assist us with access and interoperability. Also, the military and political influence that we share with these peaceful countries has been nurtured through security assistance programs and Foreign Military Sales which pave the way for quickly restoring peace with minimum risk to U.S. forces.

In conclusion, as stated in the SAF/IA White Paper:

A proactive, coherent, and comprehensive fighter strategy is needed to enhance regional stability and extend/increase US control around the globe. A noncommittal, reactive approach (i.e., a "non-strategy") will hasten rather than avoid problems. Abdication of the traditional US security assistance role to "any and all comers" would deal a mortal blow to the US aerospace industry, while greatly diminishing US influence and international security.⁴⁴

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- ⁴ Ibid., p. 4.
- ⁵ Hans J. Morgenthau, edited by Kenneth W. Thompson, Politics Among Nations, (New York: McGraw-Hill, 1985), pp. 138-9.
- ⁶ McDonnell Douglas Aircraft Corporation, Benefits of Foreign Military Sales, (Briefing Slide, Phantom International Program, GP62-0595-2-C)
- ⁷ Jacques S. Gansler, Affording Defense, (Massachusetts: MIT Press), pp. 268-9.
- ⁸ Kapstein, The Political Economy of National Security, p. 152.
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